

~~WHAT IS CLAIMED IS:~~

1. For use in an integral equation formulation of
2 capacitance, a system for generating a representation of charge
3 distribution for a given capacitive structure, comprising:

4 a charge variation function generator that creates a
5 multidimensional charge variation function that is independent of
6 a conductive geometry of said structure; and

7 a conductive geometry generator, associated with said charge
8 variation generator, that creates a conductive geometry that is
9 independent of charge variation in said structure, said charge
10 variation function and said conductive geometry employable in said
11 integral equation formulation to reduce a complexity thereof.

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2 2. The system as recited in Claim 1 wherein said integral
equation formulation is a Fast Distribution Method.

3. The system as recited in Claim 1 wherein said charge
2 variation function is a three-dimensional function.

4. The system as recited in Claim 1 wherein said charge
2 variation function is a smooth function of spatial location.

5. The system as recited in Claim 1 wherein said conductive
2 geometry generator iteratively creates said conductive geometry.

6. The system as recited in Claim 1 wherein said charge
2 variation function generator employs a generalized minimal
3 residual-based Krylov method to determine said multidimensional
4 charge variation function.

7. The system as recited in Claim 1 wherein said conductive
geometry is represented in an octtree.

~~8.~~ For use in an integral equation formulation of
2 capacitance, a method of generating a representation of charge
3 distribution for a given capacitive structure, comprising:

4 creating a multidimensional charge variation function that is
5 independent of a conductive geometry of said structure; and

6 creating a conductive geometry that is independent of charge
7 variation in said structure, said charge variation function and
8 said conductive geometry employable in said integral equation
9 formulation to reduce a complexity thereof.

9. The method as recited in Claim 8 wherein said integral equation formulation is a Fast Distribution Method.

10. The method as recited in Claim 8 wherein said charge variation function is a three-dimensional function.

11. The method as recited in Claim 8 wherein said charge
2 variation function is a smooth function of spatial location.

12. The method as recited in Claim 8 wherein said creating
2 said conductive geometry comprises iteratively creating said
3 conductive geometry.

13. The method as recited in Claim 8 wherein said creating
2 said multidimensional charge variation function comprises employing
3 a generalized minimal residual-based Krylov method to determine
4 said multidimensional charge variation function.

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14. The method as recited in Claim 8 wherein said conductive
2 geometry is represented in an octtree.

15. A system for determining a capacitance of a given
2 integrated circuit, comprising:

3 a charge variation function generator that creates a
4 multidimensional charge variation function that is independent of
5 a conductive geometry of said integrated circuit;

6 a conductive geometry generator that creates a conductive
7 geometry that is independent of charge variation in said integrated
8 circuit; and

9 an integral equation formulator, associated with said charge
10 variation generator and conductive geometry generator, that
11 determines said capacitance of said integrated circuit based on
12 said charge variation function and said conductive geometry.

16. The system as recited in Claim 15 wherein said integral
equation formulator employs a Fast Distribution Method.

17. The system as recited in Claim 15 wherein said charge
2 variation function is a three-dimensional function.

18. The system as recited in Claim 15 wherein said charge
2 variation function is a smooth function of spatial location.

19. The system as recited in Claim 15 wherein said conductive

2 geometry generator iteratively creates said conductive geometry.

20. The system as recited in Claim 15 wherein said charge
2 variation function generator employs a generalized minimal
3 residual-based Krylov method to determine said multidimensional
4 charge variation function.

21. The system as recited in Claim 15 wherein said conductive
geometry is represented in an octtree.